Appl. No. 10/658,169 Arndt. dated April 13, 2005 Reply to Office Action of December 14, 2004

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

- 1. (Currently Amended) A method for detecting a polymerase chain reaction (PCR) product, comprising:
  - (a) providing at least a pair of electrodes in a PCR solution-containing vessel;
  - (b) performing PCR;
  - (e) producing an electric field between the electrodes; and
  - (d) measuring a change in a dielectric property in the PCR solution,
  - wherein the PCR is performed in the absence of an ionically-labelled probe.
- 2. (Currently Amended) The method according to claim 1, wherein in step (b), the PCR is performed in the absence of an ionically-labelled primer.
- 3. (Original) The method according to claim 1, wherein the PCR solution-containing vessel is a PCR tube or a polymerization microchamber.
- 4. (Original) The method according to claim 1, wherein the dielectric property is an impedance, a dielectric loss, a dielectric constant, or an admittance.
- 5. (Currently Amended) The method according to claim 1, wherein in step (e), the electric field is produced using an alternating current at a frequency of 1 Hz to 100 MHz.
- 6. (Currently Amended) The method according to claim 1, wherein in step (c), the electric field is produced using an average AC voltage of 1 mV to 10 V.
- 7. (New) The method according to claim 1, wherein the PCR solution-containing vessel includes a PCR tube, and the electrodes are installed to be opposite to each other at a predetermined height from a bottom of the PCR tube.

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- 8. (New) The method according to claim 1, wherein the PCR solution-containing vessel includes a polymerization microchamber, and the electrodes are installed at upper and lower sides of the microchamber, respectively.
- 9. (New) The method according to claim 1, further comprising: connecting an impedance sensor to the electrodes to measure a change in an impedance magnitude with increase of the number of PCR cycles.
- 10. (New) The method according to claim 1, further comprising: connecting an impedance sensor to the electrodes to measure a change in an impedance magnitude with increase of the number of PCR cycles at a predetermined frequency.
- 11. (New) The method according to claim 10, wherein the predetermined frequency is about 1,000Hz.